

# SCHAEDLER BROTH w/ VITAMIN K

## INTENDED USE

Remel Schaedler Broth w/ Vitamin K is a liquid medium recommended for use in qualitative procedures for the cultivation of fastidious aerobic and anaerobic bacteria.

## SUMMARY AND EXPLANATION

In 1965, Schaedler, Dubos, and Costello formulated a medium for isolation of aerobic and anaerobic microorganisms from the gastrointestinal tract of mice.<sup>1</sup> Mata et al. modified the Schaedler formulation by adjusting the concentrations of sodium chloride and peptone, reducing the amount of glucose to avoid interference with hemolytic reactions, and decreasing yeast extract to prevent darkening of the medium.<sup>2</sup> Schaedler Broth has the same formulation as Schaedler Agar except that the agar is omitted. In 1974, Stalons, Thornsberry, and Dowell compared nine broth media in varied CO<sub>2</sub> atmospheres for the ability to support the growth of anaerobic bacteria.<sup>3</sup> Schaedler Broth demonstrated superior growth of anaerobic microorganisms and was found to be the most effective of the media tested.

## PRINCIPLE

This medium contains three peptones, dextrose, and yeast extract which provide nitrogenous growth factors, an energy source, and vitamins. Hemin supplies the X factor which is required by many fastidious organisms. Vitamin K provides for recovery of certain anaerobes (i.e., *Bacteroides* spp. and *Prevotella melaninogenica*) and stimulates the growth of gram-positive sporeformers.<sup>4,5</sup> L-cystine is a reducing agent and TRIS (hydroxymethyl) aminomethane serves as a buffer to maintain osmotic equilibrium.

## REAGENTS (CLASSICAL FORMULA)\*

Casein Peptone.....	8.2 g	Soy Peptone .....	1.0 g
Dextrose.....	5.8 g	Dipotassium Phosphate .....	0.8 g
Yeast Extract.....	5.0 g	L-Cystine .....	0.4 g
TRIS (Hydroxymethyl) Aminomethane.....	3.0 g	Hemin .....	0.01 g
Meat Peptone.....	2.5 g	Vitamin K .....	0.1 mg
Sodium Chloride.....	1.7 g	Demineralized Water.....	1000.0 ml

pH 7.6 ± 0.2 @ 25°C

\*Adjusted as required to meet performance standards.

## PROCEDURE

1. Liquid media for anaerobic incubation should be reduced prior to inoculation by placing the tubes, with caps loosened, under anaerobic conditions for 18-24 hours prior to use. Alternatively, media can be reduced by boiling with caps loosened and cooling to room temperature before inoculation.
2. Inoculate the specimen directly into Schaedler Broth w/ Vitamin K as soon as possible after it is received in the laboratory.
3. Incubate the tubes in the appropriate atmosphere, depending on the organism being cultured, at 33-37°C for up to 7 days.
4. Examine for growth indicated by turbidity of inoculated broth when compared to an uninoculated control tube.
5. Confirm anaerobic growth by subculture to an aerobic blood agar plate.

## QUALITY CONTROL

All lot numbers of Schaedler Broth w/ Vitamin K have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

### CONTROL

*Clostridium perfringens* ATCC® 13124  
*Bacteroides fragilis* ATCC® 25285

### INCUBATION

Anaerobic, 72 h @ 33-37°C  
Anaerobic, 72 h @ 33-37°C

### RESULTS

Growth on subculture  
Growth on subculture

## LIMITATIONS

1. Strict anaerobic conditions are necessary for successful recovery of obligate anaerobes when using a medium without blood.<sup>6</sup>

## BIBLIOGRAPHY

1. Schaedler, R.W., R. Dubos, and R. Costello. 1965. J. Exp. Med. 122:59-66.
2. Mata, L.J., C. Carrillo, and E. Villatoro. 1969. Appl. Microbiol. 17:596-602.
3. Stalons, D.R., C. Thornsberry, and V.R. Dowell Jr. 1974. Appl. Microbiol. 27:1098-1104.
4. Gibbons, R.J. and J.B. MacDonald. 1960. J. Bacteriol. 80:164-170.
5. Murray, P.R., E.J. Baron, J.H. Jorgensen, M.L. Landry, and M.A. Pfaller. 2007. Manual of Clinical Microbiology. 9<sup>th</sup> ed. ASM Press, Washington, D.C.
6. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol. 1. Williams & Wilkins, Baltimore, MD.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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**remel**

12076 Santa Fe Drive, Lenexa, KS 66215, USA

General Information: (800) 255-6730 Website: [www.remel.com](http://www.remel.com) Email: [remel@remel.com](mailto:remel@remel.com)

Local/International Phone: (913) 888-0939 International Fax: (913) 895-4128